



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 919,846	08 02 2001	Takashi Ohno	210159US0CONT	5030

22850 7590 04 28 2003

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT	PAPER NUMBER
----------	--------------

1756

DATE MAILED: 04 28 2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/919,846

Applicant(s)

OHNO ET AL.

Examiner

Martin J Angebranndt

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 8/2/01, 6/26/02 & 5/3/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 5-13 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 5-13 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 08/941720.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 3 & 5

5) ☐ Other

Art Unit: 1756

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 5-13 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 5, "z" is undefined. Please replace "x" in line 7, with - - z- - .

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 5-13 and 22 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the $\text{Sb}_{70}\text{Te}_{30}$ eutectic, does not reasonably provide enablement for other SbTe eutectics. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims.

In claims 5, at line 8, please replace "SbTe" with - - $\text{Sb}_{70}\text{Te}_{30}$ - - . (both occurrences). See specification at page 15/lines 1-4 , page 14/lines 1-5.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for

Art Unit: 1756

subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 5-13 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohno et al. '352

The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

See examples 4 or 6.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5-11 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori et al. JP 01-303643, in view of Morimoto et al. EP 0195532.

Fujimori et al. JP 01-303643 teaches the use of optical recording layers described by formula shown in the abstract. See the compositions set forth in example 1 (page 6 lower right column). The reference discloses that the use of Ag, In, Sn, Pb and Zn results in high speed erasure (page 8, lower left column, lines 9-20, particularly lines 9, 11, 16 and 17), which the use

Art Unit: 1756

of Se or Si results in increased stability of the amorphous phase. Useful protective layers are disclosed on pages 4 and 9 and include ZnS and SiO₂.

Hirotsune et al. '978 teaches the use of pure elements including Si, Ge, C, Au, Ag, Al, Ni, Fe, Co, Cr, Ti, Pd, Pt, W, Ta, Mo and Sb, alloys layers of the alloys, multilayers of the layers and composite layers with oxides or similar materials. (11/59-65, 51/48-52 and 57/44-49) Useful recording layers include GeTeSb based films with various additives as set forth in formula 2 and the text following it for the reasons given, including increased erasure speed, higher C/N, oxidation resistance and flow speed. (3/10-25 and 4/8-39) The use of dielectric layers including multilayers is disclosed. (10/63-11/42 and 14/55-15/42). Useful amounts of elements added to GeSbTe, such as Ag, Zn and In include from 0.03 to 0.3. (5/25-34 and 2/63-3/26). The use of reflective layer is disclosed. (11/59-65)

It would have been obvious to one skilled in the art to modify the invention of Fujimori et al. JP 01-303643 by adding a reflective layer and protective layers as taught by Hirotsune et al. '978 to provide protection for the recording layer and the reflective layer to allow the medium to be read using reflectivity. Further the desirability of adding Zn appears in both references.

9. Claims 5-13 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori et al. JP 01-303643, in view of Hirotsune et al. '978 and Takada et al. '808.

Takada et al. '808 teaches the use of mark length recording with phase change optical recording media. The power of the laser is modulated according to the formulae shown in columns 7-13. These allow effective recording at different linear velocities. (4/59-5/60) The use of this recording technique with media embraced by the formula described in column 5 line 65-

Art Unit: 1756

recording layer compositions and the thicknesses of the recording layer and upper dielectric layer being 15-30 and 10-30 nm respectively are disclosed. (13/26-34 and 18/23-36) The thickness of the recording layer is disclosed. (19/1-8) The composition (19/17-22/18) and thicknesses of the protective dielectric layers are disclosed (22/19-42) Useful reflective layers and thicknesses are disclosed. (22/43-53).

It would have been obvious to one skilled in the art to add other elements disclosed on page 8 other than Ge in an amount of less than 20 at% to gain improvements in amorphous phase stability and adjust crystallization speed and to use the rapid cooling structure known in the art as evidenced by Hirotsune et al. '978 to increase cycle ability (overwrite characteristics) with thicknesses in the range taught by Takada et al. '808 and to use the recording technique disclosed by Takada et al. '808 as improved in place of that used in the examples of Fujimori et al. JP 01-303643. Further the examiner holds that it would have been obvious to one skilled in the art to replace a portion of the Ge with Zn based in the resulting media based upon the disclosure within Fujimori et al. JP 01-303643

10. Claims 5-13 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori et al. JP 01-303643, in view of Hirotsune et al. '978 and Takada et al. '808, further in view of Morimoto et al. EP 0195532.

Morimoto et al. EP 0195532 teaches that in addition to Ge, Te and Sb, the incorporation of other metals may be desirable. Zn, Se, Sn, Pb, In are disclosed as increasing sensitivity (page 14) The use of compositions set forth in the formula on page 12. The use of metallic compounds to form protective layers on either side of the recording layer is disclosed. (pages 20-21). The

Art Unit: 1756

structure of optical recording media is shown in figure 14. The use of reflective layers is also disclosed. (pages 19 and 20).

In addition to the above basis for the combination of the references, the examiner cites Morimoto et al. EP 0195532 to emphasize the desirability of adding Zn to GeTeSb compositions, specifically to increase the sensitivity of the compositions.

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claims 5-13 and 22 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-24 of U.S. Patent No. 6,115,352.

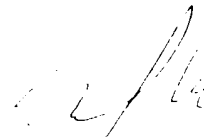
These seek coverage for the same subject matter, see particularly claim 6,814, and 16.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebrannndt whose telephone number is 703-308-4397. The examiner can normally be reached on Mondays-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular

Art Unit: 1756

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Martin J. Angebranndt
Primary Examiner
Art Unit 1756

April 24, 2003